Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

MYCOLOGIA

VOL. V MARCH, 1913 NO. 2

STUDIES IN NORTH AMERICAN HYPHOMYCETES—II[1]

THE TRIBE OOSPOREAE

DAVID ROSS SUMSTINE

(WITH PLATES 82–84 CONTAINING 28 FIGURES)

Lindau[2] includes in the tribe *Oosporeae* thirteen genera, as follows: *Sporendonema, Malbranchea, Glycophila, Oospora, Monilia, Oidium, Paepalopsis, Halobyssus, Fusidium, Cylindrium, Polyscytalum, Geotrichum, Helicocephalum.*

The plants are small, inconspicuous, and parasitic or saprophytic. The mycelium is generally poorly developed and differs very little from the sporophores. The sporophores are short, lax or rigid. The hyaline or bright-colored spores are produced in chains endogenously or exogenously.

The genus *Sporendonema* was first described by Desmazieres[3] with one species, *S. Casei.* This is generally considered congeneric with the so-called *Oospora Lactis* (Fres.) Sacc., and synonymous with *Oospora crustacea* (Bull.) Sacc. *Chalara mycoderma* Bon. is also cited as a probable synonym of *S. Casei.* Oudeman[4] describes a new species, *S. terrestre,* and redescribes the genus. He transfers the type *S. Casei* to the genus *Torula.* One species has

---

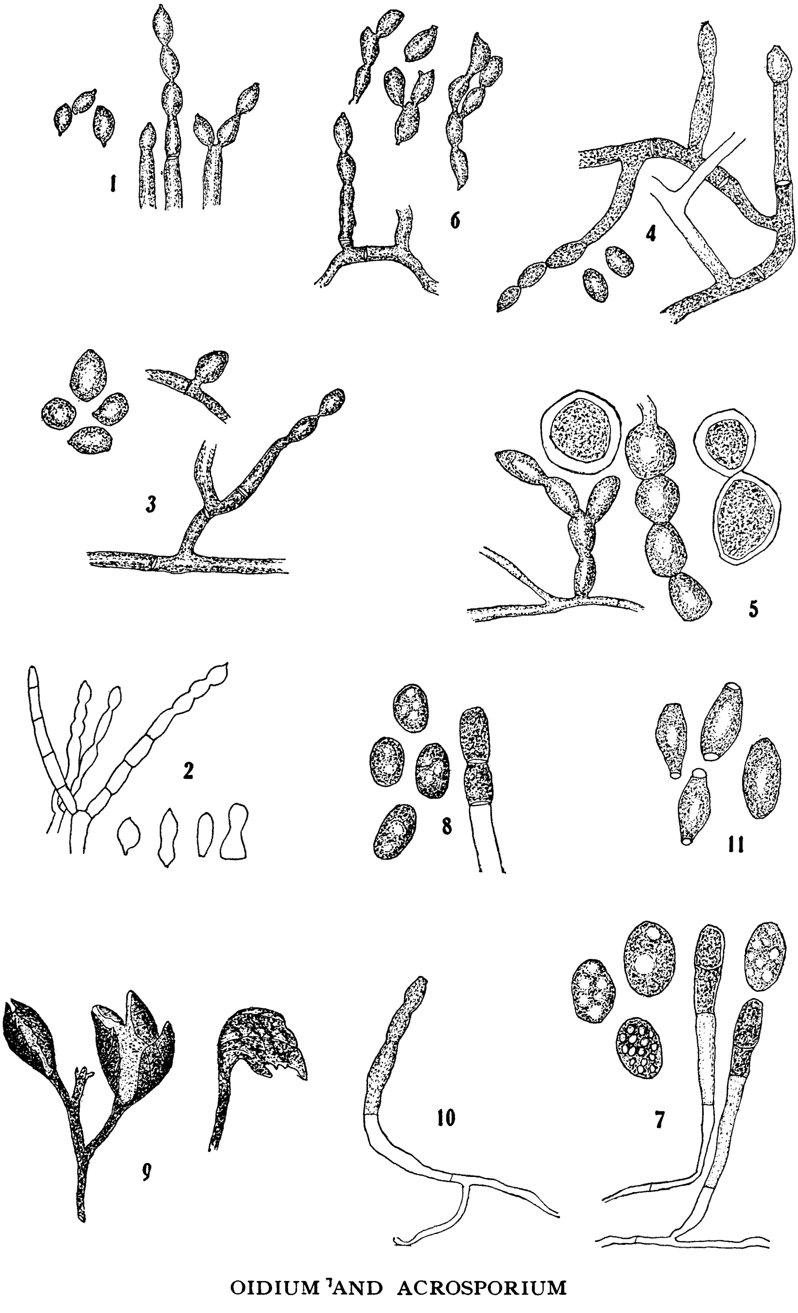
[1] Studies in North American Hyphomycetes—I. was published in MYCOLOGIA 3: 45–56. March, 1911.

[2] Pflanzenfamilien 1[1] **: 417. 1900.

[3] Ann. Sci. Nat. I. 11: 246. 1827.

[4] Archives Neerl. 20: 419. 1885.

[MYCOLOGIA for January, 1913 (5: 1–44) was issued January 13, 1913]



OIDIUM AND ACROSPORIUM

been reported from America, *S. myophilum* Sacc.[5] This species was not available for study.

Glycophila, Paepalopsis and *Halobyssus* have not been reported from America. The first one has two species, the other two are monotypic.

The genus *Fusidium*[6] is very indefinite and will require more extended study to determine its limits.

Cylindrium will be discussed under the genus *Polyscytalum.*

The genus *Helicocephalum* is monotypic and does not belong here. It is more closely related to the *Mucoraceae.*[7]

Hill[8] gives the first description of the genus *Monilia.* It is quite interesting and seems worthy of reproduction here:

"Monilia is a genus of Fungi, consisting of a pedicle supporting a number of naked seeds, arranged together in series like the beads of a necklace.

"The Monilia all produce distinct male and female flowers. The male flowers are antherae, placed on short stamina, on the summit of the pedicle, or near the summit, surrounding it in form of fine powder. The female flowers we are able to distinguish nothing of, except the seeds which are arranged together in series, by means of a glutinous matter, and stand sometimes close to one another, sometimes more distinct. In some species these chains of seeds are laid along both sides of the summit of the stalks; in others they are wound round in clusters, and form a kind of tuberous knobs, which terminate it; in others they rise at distances from the very summit of the pedicle, in forms of fingers; and finally, in others they rise more numerous in this form, and near their bases, so as to form a kind of globule, with the extremities of several of the chains of seeds hanging down from them. These clusters of the series of seeds Micheli took for placentae; he also divided this genus into two, under the names of *Botrytis* and *Aspergillus* but the differences, this division is founded upon, are rather specific than generical; we have arranged them all together under one genus."

---

[5] Ann. Rep. N. Y. State Mus. **41**: 80. 1888.

[6] Link, Berl. Mag. **3**: 8. 1809.

[7] Thaxter, Bot. Gaz. **16**: 201. 1891.

[8] Hist. of Plants 69. 1751.

Under this genus three species are enumerated: *M. capitata, divaricata, ramosa.* It is impossible to tell definitely what species Hill had before him.

The next general reference to this genus is given by Wiggers.[9] Two species are listed: *M. crustacea*=*Mucor crustaceus* Linn. and *M. Aspergillus*=*Mucor Aspergillus* Scop.

Roth[10] accepts the genus, cites Wiggers and enumerates *M. crustacea, cespitosa, aspergillus, nidulans.*

Persoon[11] gives *M. aurea, cespitosa aurea*=*Aspergillus Mich.* 2. He also adds the following species: *M. rosea, glauca, candida, racemosa, simplex.* In a later work[12] the same species are enumerated.

From these references it seems clear that the genus *Monilia* is congeneric with *Aspergillus* and *Penicillium* and should be retained in that group.

The other genera in this tribe will be discussed at more length in the following pages. No attempt is made to give all the probable synonyms. It was deemed advisable to divide some of the genera and make new genera in order to bring together the more closely related species.

Many of the types of this group are not available for study and in a number of cases are no longer in existence. The study of the species of this group must necessarily be based on descriptions.

OIDIUM Link, Berl. Mag. 3: 18. 1809

?*Alysidium* Kunze, Mykol. Hefte 1: 11. 1817. Type, *Alysidium fulvum* Kunze.

ORIGINAL DESCRIPTION: Thallus e floccis caespitosis, septatis, ramosis, decumbentibus; apicibus articulatis; articulis in sporidia secedentibus. Unica species, colore pulchre aureo.

Mycelium well developed, branched, septate, interwoven; sporophores erect or suberect, septate, simple or branched, rigid; spores produced in chains, hyaline or bright-colored.

Type species, *Trichoderma aureum* Pers.

---

[9] Prim. Fl. Holsat. 111. 1780.

[10] Tent. Fl. Ger. 1: 558. 1788.

[11] Tent. Disp. Meth. Fung. 40. 1797.

[12] Syn. Meth. Fung. 691. 1801.

This genus resembles *Rhinotrichum* in general appearance and in structure, but differs from that genus in the production of spores. In *Rhinotrichum* the spores are produced singly on the upper divisions of the sporophores, in *Oidium* the spores are produced in chains.

KEY TO THE SPECIES

Spores not over 30 μ long.	
Pulvinate, spores 10–20 μ long.	1. *O. aureum.*
Effused, spores 11–30 μ long.	2. *O. simile.*
Effused, spores 12–24 μ long.	3. *O. Murrilliae.*
Spores much larger.	4. *O. megalosporum.*

1. OIDIUM AUREUM (Pers.) Link, *l. c.*

?*Alysidium fulvum* Kunze, *l. c.*
Torula aurea (Link) Corda, Icon. **2**: 8. 1837.

Pulvinate or tufts sometimes confluent, floccose, yellow, tawny; mycelium creeping, septate, sending up erect or suberect sporophores; sporophores erect, simple or branched, septate; spores ovoid-ellipsoid, lemon-shaped, colored, 10–12 × 16–20 μ.

On decaying wood.

SPECIMENS EXAMINED: New Jersey, *Ellis,* N. A. F. *1647;* Pennsylvania, *Schweinitz.*

In all probability *Monilia effusa* Peck[13] belongs here.

2. OIDIUM SIMILE Berk. Jour. Bot. 4: 310. 1845

Oospora similis (Berk.) Sacc. Syll. Fung. **4**: 23. 1886.
Monilia aureofulva Cooke & Ellis Grevillea **8**: 12. 1886.

Effused, forming a dense mass over the substratum, yellow to reddish yellow; mycelium septate, interwoven; sporophores long, simple or branched, septate; spores in chains, globose or subglobose to ovoid, colored, variable in size, 11–20 × 18–30 μ.

On decayed wood.

SPECIMENS EXAMINED: Pennsylvania, *Sumstine.*

This species resembles *Rhinotrichum Curtisii* in general appearance. *Monilia aurantiaca* Peck & Sacc.[14] is in all probability the same as this species.

---

[13] Ann. Rep. N. Y. State Mus. **42**: 128. 1889.

[14] Ann. Rep. N. Y. State Mus. **42**: 128. 1889.

3. **Oidium Murrilliae** sp. nov.

Effused, rather thick, powdery, yellow, melleous to ochraceous, at first white; mycelium densely interwoven, branching, septate; sporophores erect or suberect, short, septate; spores in short chains, sometimes branching, colored, irregularly shaped, ellipsoid to lemon-shaped, 12–14 × 20–24 μ.

On decaying wood.

SPECIMENS EXAMINED: Mexico, near Cuernavaca, *W. A.* and *Edna L. Murrill, 446* (type).

The type is in the herbarium of the New York Botanical Garden.

4. OIDIUM MEGALOSPORUM Berk & Curt. Jour. Linn. Soc. 1: 363. 1869

Monilia megalospora (Berk. & Curt.) Sacc. Syll. Fung. **4**: 33. 1886. Not *Oidium megalosporum* Speg. Fungi Argentini **4**: 122. 1881.

Pulvinate, growing in small tüfts, sometimes several tufts confluent, powdery, yellow, pale yellow; mycelium scanty, branched, septate; sporophores very short; spores in short chains, globose or subglobose, granular within, very large, 35–45 μ, occasionally 50–70 μ.

On decayed wood.

SPECIMENS EXAMINED: Delaware, *Cummins;* Florida, *Calkins;* New Jersey, *Curtis;* New York, *Brown, Clinton;* Ohio, *Morgan;* Pennsylvania, *Sumstine;* West Virginia, *Sumstine.*

OOSPORA Wallr. Fl. Crypt. Ger. **2**: 182. 1833

ORIGINAL DESCRIPTION: Sporidia subglobosa s. oriformia intricata pellucida, primum concatenata, hypham articulatam simplicem teneram decumbentem mentientia, articulisque inter se facile secedentibus fragilia.

Mycelium scanty, more or less distinct from the sporophores, septate; sporophores thick, erect or decumbent, simple or branched, breaking into chains of spores, friable; spores variously shaped, concatenate, hyaline or bright-colored.

Type species, *Torula fructigena* Pers.

There is some doubt as to the identity of *Oospora candida,* but from the description it is probably a variety or a young stage of *Oospora fructigena* (*Torula fructigena* Pers.). This latter species is given as the second species under the genus, and, in case the former is not considered sufficiently clear to establish the genus, there can be no doubt as to the second species.

KEY TO THE SPECIES

Pinkish to brown.	1. *O. fructigena.*
Gray to ash-colored.	
Pulvinate.	2. *O. cinerea.*
Effused, spores 8–10 × 10–12 μ.	3. *O. Cerasi.*
Effused, spores larger.	4. *O. Linhartiana.*
White or sordid white.	
Spores large, 15–23 × 20–30 μ.	5. *O. fungicola.*
Spores small, 5–8 μ.	6. *O. Arthuri.*
Spores medium, 10–14 μ.	7. *O. Martinii.*

1. OOSPORA FRUCTIGENA (Pers.) Wallr. *l. c.*

Torula fructigena Pers. Obs. Mycol. 1: 26. 1796.
Monilia fructigena Pers. Syn. Fung. 693. 1801.
Oidium fructigenum Link Sp. Pl. 6^1: 122. 1824.

Pulvinate, sometimes confluent, white at first, then pink to brown; mycelium fasciculate, thin, septate; sporophores erect or suberect, simple or branched, dividing into chains of spores; spores ovoid, obovoid, or lemon-shaped, hyaline or colored, 10–12 × 16–25 μ.

On various fruits, as apple, peach, plum.

SPECIMENS EXAMINED: Canada, *Thaxter;* New York, *Shear;* Ohio; Pennsylvania, *Sumstine;* South Carolina, *Ravenel.*

This fungus is known as the "brown rot" of fruit. It has been investigated by various students and its life history is fairly well known. It might more properly be treated under the perfect stage, *Sclerotinia fructigena* (Pers.) Schroet.

2. **Oospora cinerea** (Bon.)

Monilia cinerea Bon. Handb. Mykol. 76. 1851.

Pulvinate or effused, gray or gray-brown; mycelium branched, septate; sporophores short, erect, branched, breaking into spores;

spores concatenate, ellipsoid, irregular in shape, hyaline or light-colored, 10–12 × 16–18 μ.

On cherries.

SPECIMENS EXAMINED: Pennsylvania, *Everhart, 484.*

This species is closely related to the preceding species. The spores are smaller and the tufts are not so large.

3. **Oospora Cerasi** (Tracy & Earle)

Monilia Cerasi Tracy & Earle, Greene Pl. Baker. **1**: 35. 1901.

Effused, covering the entire fruit with a white coating, finally becoming ash-colored; mycelium developed in the fruit, branched; sporophores short, erect, branched, bearing the concatenate spores; spores spherical, lemon-shaped, hyaline or slightly colored, 10–12 μ.

On immature fruit of wild cherry.

SPECIMENS EXAMINED: Colorado, *Tracy* and *Earle, 1083* (part of the original collection).

The effused growth and smaller spores distinguish this species from the two preceding species.

4. **Oospora Linhartiana** (Sacc.)

Monilia Linhartiana Sacc. Syll. Fung. **4**: 34. 1886.

Effused, thin, gray-white, spreading along petioles and veins of leaves; mycelium scanty, septate, hyaline; sporophores short, simple or branched, with chains of spores; spores globose, subglobose or ellipsoid, 10–12 × 12–18 μ.

On *Prunus* sp.

SPECIMENS EXAMINED: Canada, *Dearness, 468;* Maine, *Thaxter;* Wisconsin, *Stevens.*

The spore measurements given by Saccardo are somewhat larger than those given above.

5. **Oospora fungicola** (Ellis & Barth.)

Monilia fungicola Ellis & Barth. Erythea **5**: 50. 1897.

Effused, thick, forming a felt-like coating, ashen-gray; mycelium hyaline, interwoven, branched, septate; sporophores erect, simple, short; spores in short chains, hyaline, ellipsoid, irregular, 15–23 × 20–30 μ.

On *Lycoperdon giganteum.*

SPECIMENS EXAMINED: Kansas, *Bartholomew* (type).

6. **Oospora Arthuri** nom. nov.

Monilia candida Bon. Handb. Mykol. 76. 1851.

Tufted, confluent, white to yellow-white; mycelium well developed, branched, septate; sporophores erect, simple or branched, bearing the chains of spores; spores globose to ovoid, 5–8 μ.

On mucor culture.

SPECIMENS EXAMINED: Indiana, *Arthur.*

The type specimen grew on decayed wood. The specimen determined as this species agrees well with the original description.

It is regretted that the transfer of this species from one genus to another necessitates a new name. There is already an *Oospora candida.*

7. **Oospora Martinii** (Ellis & Sacc.)

Monilia Martinii Ellis & Sacc. Michelia **2**: 376. 1880.

Effused or pulvinate, white with slight rosy tinge; mycelium creeping, scanty, septate; sporophores erect, septate, simple or branched; spores concatenate, globose or subglobose, irregular, colored, 10–14 μ.

On decayed rachis of *Zea Mays.*

SPECIMENS EXAMINED: Pennsylvania, *Martin;* Ohio, Fungi Columb. *1358.*

Monilia sitophila (Mont.) Sacc. is said to be different in color and in the obtuse ends of the spores.

DOUBTFUL SPECIES

Monilia Peckiana Sacc. & Vogl. Syll. Fung. **4**: 34. 1886. On *Vaccinium pennsylvanicum.* This is said to be near *Oospora Linhartiana.*

Oosporoidea gen. nov.

Mycelium scarcely differing from the sporophores, interwoven, crustaceous; the sporiferous hyphae breaking up into spores (?) or forming erect or suberect sporophores with hyaline or bright-colored concatenate spores.

Type species, *Oidium Lactis* Fres.

Oosporoidea Lactis (Fres.)

Oidium Lactis Fres. Beitr. Mykol. 23. 1851.

Oospora Lactis (Fres.) Sacc. Syll. Fung. **4**: 15. 1886.

Effused, membranaceous, white, forming small patches, sometimes spreading for a considerable distance; mycelium interwoven, septate or simple; sporophores not sharply differentiated from the mycelium, erect or suberect, dividing into spores; spores in chains, irregular in shape and in size, frequently subglobose to ellipsoid, 5–7 × 12–20 μ.

On cheese.

SPECIMENS EXAMINED: Pennsylvania, *Sumstine.*

Toruloidea gen. nov.

Mycelium scanty, simple or branched; sporophores erect or suberect, simple or branched; spores simple, formed in chains by the division of the sporophore, hyaline or bright-colored.

Type species, *Toruloidea effusa* Sumstine.

This genus is closely allied with *Torula.* The principal difference lies in the color of the spores; in *Torula* the spores are dark-colored, in *Toruloidea* hyaline or bright-colored. The genus is separated from *Oospora* by its delicate structure, less developed mycelium, and much smaller sporophores.

KEY TO THE SPECIES

Pale yellow to yellow.	
Effused.	1. *T. effusa.*
Pulvinate.	2. *T. Unangstii.*
White to sordid white.	
Spores globose or nearly so.	3. *T. Nicotianae.*
Spores ellipsoid to cylindrical.	4. *T. Tulipiferae.*
Spores ovoid to obovoid.	5. *T. candidula.*

1. **Toruloidea effusa** sp. nov.

Effused, thick, pale yellow to yellow, pulverulent; mycelium creeping, branched; sporophores short, erect, simple; spores in chains, ellipsoid, hyaline or subhyaline, usually with a short apiculus, 3–4 × 4–6 μ.

On decayed wood. Bemus Point, N. Y.

SPECIMENS EXAMINED: New York, *Sumstine* (type).

The type specimen is in the herbarium of the Carnegie Museum, Pittsburgh.

2. **Toruloidea Unangstii** sp. nov.

Pulvinate, sometimes confluent, but usually in small patches, yellow; mycelium creeping, branched, filiform; sporophores erect, short, bearing long chains of spores; spores yellow, ovoid to ellipsoid, 2–3 × 3–4 μ.

On decayed wood. Transfer, Pa.

SPECIMENS EXAMINED: Pennsylvania, *Sumstine* and *Unangst* (type).

Type specimen is in the herbarium of the Carnegie Museum, Pittsburgh, Pa.

3. **Toruloidea Nicotianae** (Pezz. and Sacc.)

Oospora Nicotianae Pezz. and Sacc. Syll. Fung. **14**: 1037. 1899.

Pulvinate or effused, in small patches, white; mycelium filiform, creeping, branched, septate; sporophores short, erect; spores in chains, globose to ellipsoid, 2.5–3 μ.

On tobacco leaves.

SPECIMENS EXAMINED: Ohio.

The original description says the spores are papillate. The specimens examined did not show this character.

4. **Toruloidea Tulipiferae** (Ellis & Mart)

Oospora Tulipiferae Ellis & Mart. Amer. Nat. **16**: 1004. 1882.

Thin, effused, white or slightly colored; mycelium subhyaline or light brown, septate; sporophores short, erect; spores hyaline or subhyaline, ellipsoid to cylindrical, concatenate, chains long, branched, 3–4 × 7–9 μ.

On leaves of *Liriodendron*.

SPECIMENS EXAMINED: Pennsylvania, *Martin*.

The specimen examined is likely a part of the original collection, but it was not sufficient for a satisfactory examination. The plants grow on light brown spots on the leaves. A drawing on the label by Dr. Martin shows the chains of spores several times branched. The description here given is more or less compiled from the original.

5. **Toruloidea candidula** (Sacc.)

Oospora candidula Sacc. Michelia **2**: 545. 1880.

Pulvinate or effused, white; mycelium creeping, branched; sporophores erect, simple or branched; spores in long chains, hyaline, ovoid or obovoid, 3 × 5–6 μ.

On various substances.

SPECIMENS EXAMINED: New Jersey, *Ellis* and *Harkness.*

The specimen is in the New York Botanical Garden and marked *Oospora hyalinula* Sacc.

POLYSCYTALUM Riess. Bot. Zeitung **11**: 138. 1853

ORIGINAL DESCRIPTION: Flocci erecti, subrigidi, ramosi; sporae simplices, cylindricae in catenas ramosas, ex floccorum ramorumque apicibus natas seriatae.

Mycelium wanting, or at least not differing from the sporophore; sporophores simple or branching, septate, hyaline or slightly colored; spores borne in chains at the ends of the sporophores, cylindric, obtuse at each end.

Type species, *Polyscytalum fecundissimum* Riess.

The difference between this genus and *Cylindrium* is based on the development of the mycelium. In the latter it is not so well developed. This distinction scarcely constitutes a generic difference and there seems no good reason for maintaining the two genera.

KEY TO THE SPECIES

White to subfuligineous.	1. *P. cylindroides.*
White to sordid white.	2. *P. sericeum.*

1. POLYSCYTALUM CYLINDROIDES Sacc. & Ellis Jour. Mycol. **4**: 105. 1888

Tufts small, white to subfuliginous; sporophores a little incrassated from the base, subcylindric, subsimple; spores cylindric, obtusely rounded at each end, spuriously 1-septate, 2.5–3 × 15–20 μ.

On fallen oak leaves.

SPECIMENS EXAMINED: New Jersey, *Ellis,* N. A. F. *2455.*

This species is in all probability the same as the following.

2. POLYSCYTALUM SERICEUM Sacc. Michelia 1: 86. 1879

Effused or cespitose, white to sordid white; sporophores short or somewhat elongated, septate; spores concatenate, cylindric, ends obtuse, hyaline, 2.5–3 × 15–18 µ.

On oak leaves.

SPECIMENS EXAMINED: Canada, *Harkness;* New Jersey, Fung. Columb. *1357*; Pennsylvania, *Sumstine.*

GEOTRICHUM Link, Berl. Mag. 3: 17. 1809

ORIGINAL DESCRIPTION: Thallus e floccis caespitosis septatis, ramosis, decumbentibus. Sporadia ovalia, utrinque truncata, inspersa.

Mycelium scanty, floccose, septate, effused or cespitose; sporophores short, simple or branched; spores borne on the ends of the sporophores in chains, short cylindric, hyaline or light-colored.

Type species, *Geotrichum candidum* Link.

KEY TO THE SPECIES

Pulvinate, spores 5–12 µ long.	1. *G. candidum.*
Effused, spores shorter.	2. *G. cuboideum.*

1. GEOTRICHUM CANDIDUM Link, *l. c.*

Small white tufts; mycelium scanty, creeping; sporophores erect, simple or branched, septate, hyaline; spores short cylindric, hyaline, 3–4 × 5–12 µ; the length varies but the thickness is rather constant.

On various substrata.

SPECIMENS EXAMINED: New Jersey, *Ellis.*

2. **Geotrichum cuboideum** (Sacc. & Ellis)

Oospora cuboidea Sacc. & Ellis Michelia 2: 576. 1880.

Effused, forming a thin powdery coat over the substratum, white; mycelium branching, interwoven; sporophores erect, short; spores in chains, cuboid, irregular, 2–3 × 3–4 µ.

On decaying wood.

SPECIMENS EXAMINED: New Jersey, *Ellis.* Probably part of the original collection.

MALBRANCHEA Sacc. Michelia **2**: 638. 1880

ORIGINAL DESCRIPTION: Hyphae repentes, intricatae, continuae, hyalinae, v. laete coloratae, hinc inde in ramulos arcuatos abeuntes; ramuli seriatim plurinucleati, dein ex apice conidia cuboidea v. teretiuscula, continua, hyalina v. laete colorata exserentes.

Mycelium creeping, interwoven, branched, septate or continuous, hyaline, or bright-colored; sporophores short, suberect or arcuate, simple; spores in chains, formed endogenously within the extremities of the sporophores.

Type species, *Malbranchea pulchella* Sacc.

1. **Malbranchea pulveracea** (Ellis)

Monilia pulveracea Ellis; Craigin, Bull. Washburn Coll. **1**: 69. 1884.

Rhinotrichum pulveraceum Ellis Jour. Mycol. **1**: 47. 1885.

Effused, thin, pale yellow; mycelium branched, sparingly septate; sporophores short, suberect, simple or branched, with smooth swollen ends; spores in chains, formed within the swollen ends, globose or ellipsoid, 5–9 μ or 5–7 × 5–12 μ.

On dead wood and bark.

SPECIMENS EXAMINED: Kansas, *Ellis* and *Craigin.*

This species is placed in this genus with some hesitation. In some respects it agrees better with the genus *Glycophila.* The exact formation of spores could not be learned from the herbarium specimen. The original description says that the spores appear at first inside the swollen ends and push out through the investing membrane.

ACROSPORIUM Nees. Sys. Pilze **2**: 14. 1817

ORIGINAL DESCRIPTION: Flocci simplices, aggregati, sursum moniliformes, articulis secedentibus inspersi.

Parasitic; mycelium scanty or well developed; sporophores lax, erect, simple, septate; spores produced in chains.

Type species, *Acrosporium monilioides* Nees = *Monilia hyalina* Fr.

This genus contains the conidial stages of the *Erysiphaceae.*

It seems desirable to retain this form-genus, since some of the forms have not yet been definitely associated with known species of the various genera of the *Erysiphaceae.*

Culture work on species of this genus is in progress, and, therefore, a mere enumeration of the species examined is given at present.

1. **Acrosporium hyalina** (Fr.).
Monilia hyalina Fr. Obs. Mycol. **1**: 210. 1815.
Acrosporium monilioides Nees, *l. c.*

On various grasses. The conidial stage of *Erysiphe graminis* DC.

2. **Acrosporium obductum** (Ellis & Lang.).
Oidium obductum Ellis & Lang. Jour. Mycol. **6**: 35. 1890.

On living leaves of young *Quercus.*

3. **Acrosporium Tuckeri** (Berk. & Br.).
Oidium Tuckeri B. & Br. Grev. **7**: 28. 1878.

On vine leaves. Probably the conidial stage of *Uncinula necator* (Schw.) Burrill.

4. **Acrosporium leucoconium** (Desm.).
Oidium leucoconium Desm. Ann. de Sci. **13**: 102. 1829.

The conidial stage of *Sphaerotheca pannosa* (Wallr.) Lév. There is a variation in the spelling of the specific name. The following spellings occur, *leuconium* and *leucogonium.*

6. **Acrosporium compactum** (Cooke & Ellis).
Oidium compactum Cke. & Ell. Grevillea **7**: 39. 1878.

On *Quercus alba.*

7. **Acrosporium Euonymi-japonici** (Salmon).
Oidium Euonymi-japonici Salmon, Ann. Mycol. **3**: 6. 1905.

No specimen of this species was seen but it is said to be near *A. leucoconium.*

8. **Acrosporium pirinum** (Ellis & Ev.).
Oidium pirinum Ellis & Ev. Jour. Mycol. **5**: 68. 1889.

On leaves of *Pirus coronaria.*

9. *Acrosporium* sp.
?*Microsphaera Platani* Howe, Bull. Torrey Club **5**: 4. 1874.

Amphigenous, white, effused, forming a dense stratum on the leaf; mycelium branched, interwoven; sporophores erect, simple, septate; spores smooth, ellipsoid, granular within, 25–27 × 40–50 μ.

On leaves of *Platanus orientalis* L., Pittsburgh, Pa., August, 1912.

It attacks the young leaves usually and causes them to curl up and die. Unless checked it may become a dangerous shade tree disease.

10. **Acrosporium Gossypii** sp. nov.

Hypophyllous, white to sordid white, effused, thin, spreading over the leaf; mycelium branched, interwoven; sporophores erect, simple, dividing into spores; spores barrel-shaped, ellipsoid, truncate at the ends, 16–24 × 40–50 μ.

On *Gossypium* sp. (Cotton). Kingston, Jamaica.

The type was collected by T. D. A. Cockerell and sent to me by Flora W. Patterson, of the Bureau of Plant Industry, Washington, D. C. It was labeled *Oidium erysiphoides*.

Oidium erysiphoides Fr.[15] is a composite species. The name cannot be applied to any particular form of this genus but belongs to all the forms in general.

SPECIES REPORTED

The following species have been reported from North America, but no specimens were examined. They probably belong to the various genera described in this paper.

1. *Oidium albipes* Peck, Ann. Rep. N. Y. State Mus. **30**: 57. 1878.
2. *Oidium Asteris-punicei* Peck, Bull. N. Y. State Mus. **150**: 35. 1911.
3. *Oidium candidum* Schw. Trans. Amer. Philo. Soc. II. **4**: 285. 1832. The type of this species has been lost and the description is too brief for determination.
4. *Monilia Harknessii* Peck, Ann. Rep. N. Y. State Mus. **34**: 49. 1881.
5. *Monilia Avenae* Peck, Bull. Torrey Club **33**: 219. 1906.

---

[15] Syst. Mycol. **3**: 432. 1829.

6. *Monilia viridi-flava* Cooke & Hark. Grevillea **9**: 139. 1881.

7. *Monilia diffusa* Ellis & Ev. Jour. Mycol. **1**: 44. 1885.

8. *Monilia Peckiana* Sacc. & Vogl. Syll. Fung. **4**: 34. 1886. This is said to be the same as *Monilia Linhartiana* Sacc.

9. *Monilia globosa* Schw. Trans. Amer. Phil. Soc. II. **4**: 286. 1832. Type is lost.

10. *Oospora cucumeris* Peck, Ann. Rep. N. Y. State Mus. **41**: 80. 1888.

11. *Oospora heterospora* Ellis & Ev. Bull. Torrey Club **24**: 470. 1897. From the description this seems to belong to the genus *Toruloidea.*

12. *Torula pallida* Berk. & Br. Grev. **3**: 14. 1873.

Oospora pallida (Berk. & Br.) Sacc. & Vogl. Syl. Fung. **4**: 24. 1886. The type specimen was collected by Ravenel in South Carolina. It evidently is a *Toruloidea.*

EXCLUDED SPECIES

1. *Monilia rubiginosa* Peck, Ann. Rep. N. Y. State Mus. **30**: 58. 1878. This has been transferred to the genus *Zygodesmus.*

2. *Monilia pencillata* Ellis & Ev. Jour. Mycol. **4**: 54. 1888. This is now considered the same as *Chondromyces aurantiacum* (Berk. & Curt.) Thaxter.

3. *Monilia candida* Peck, Ann. Rep. N. Y. State Mus. **27**: 106. 1875. This name is not tenable. The plant is likely the same as *Monilia mycophila* Sacc.

4. *Monilia punctans* Schw. Trans. Amer. Phil. Soc. II. **4**: 286. 1832. The type is lost but the species should be referred to *Torula.*

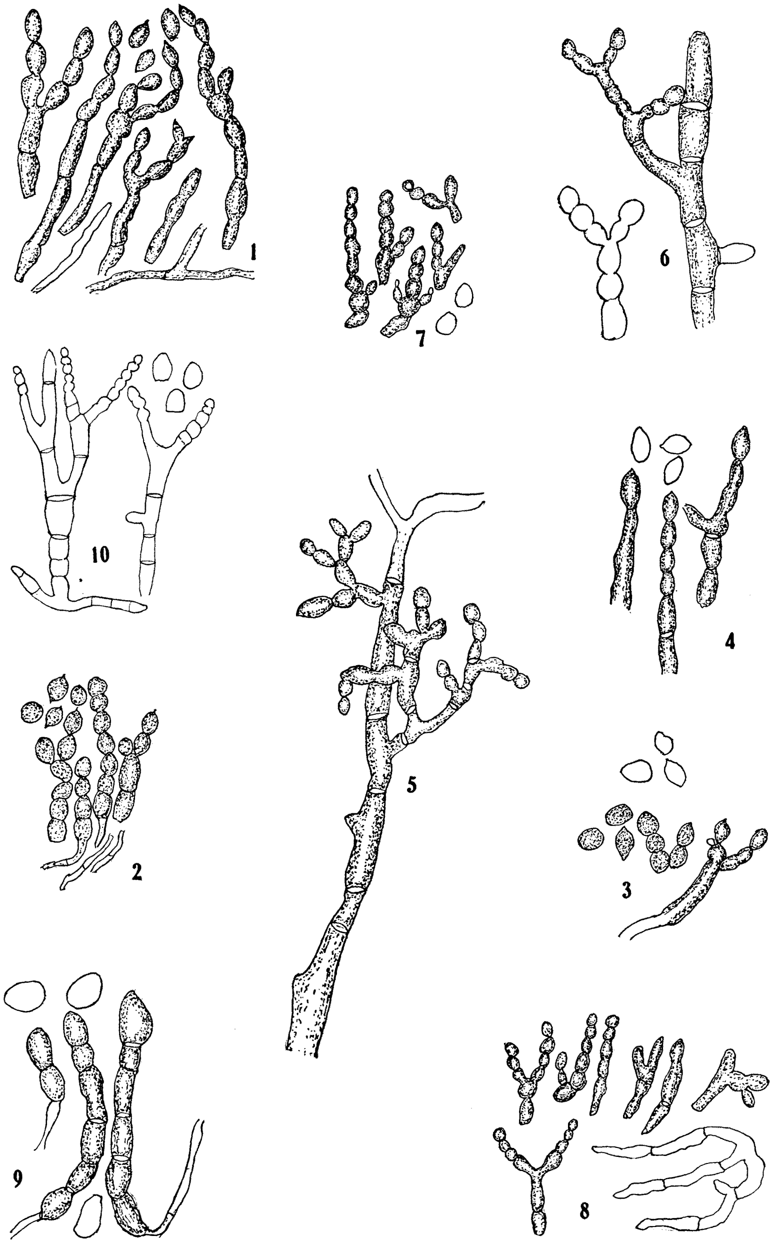
5. *Monilia fusconigra* Schw. Trans. Amer. Phil. Soc. II. **4**: 286. 1832. This is a *Torula.*

6. *Monilia urediniformis* Ellis & Ev. Proc. Acad. Nat. Sci. Phila. 461. 1893.

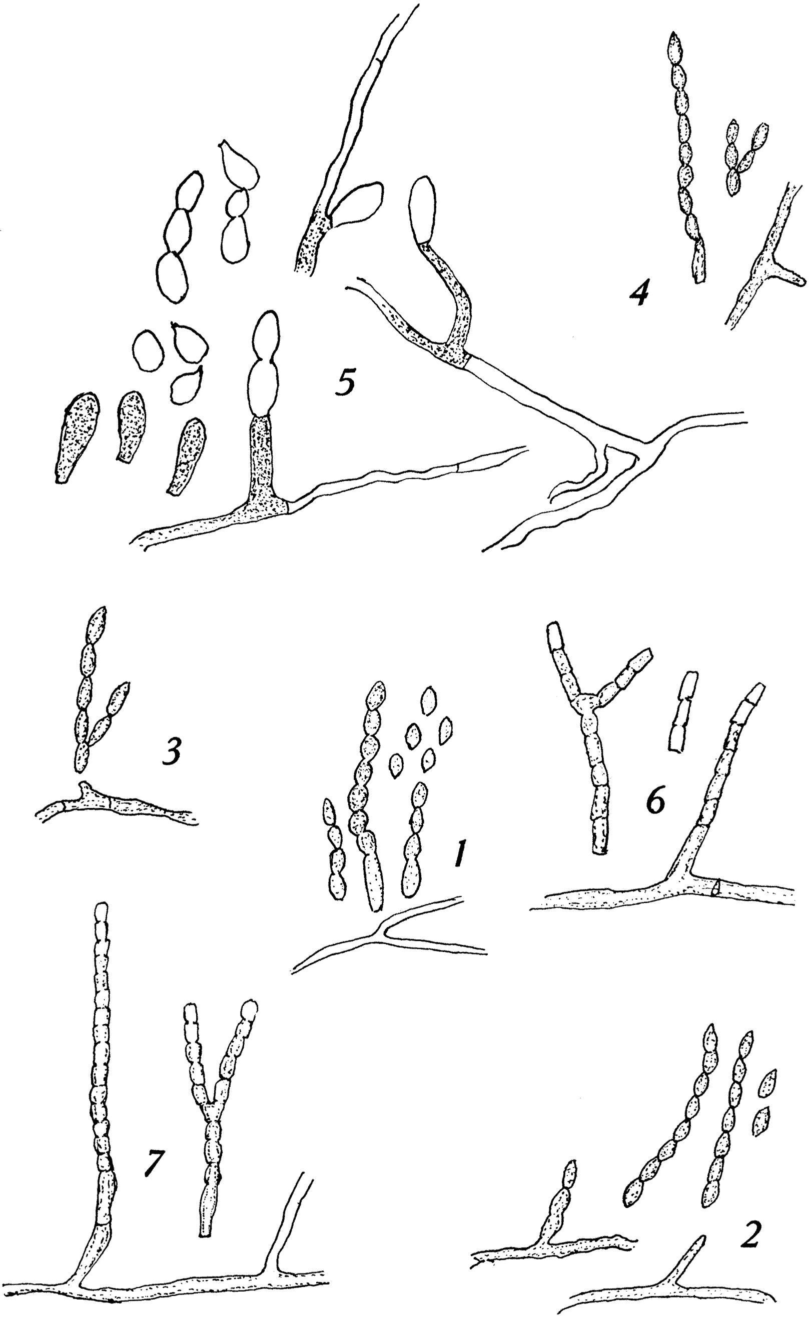
7. *Oidium inquinans* Schw. Trans. Amer. Phil. Soc. II. **4**: 286. 1832. A *Torula.*

8. *Oidium corticale* Peck, Ann. Rep. N. Y. State Mus. **27**: 105. 1875. A *Torula.*

9. *Oidium irregulare* Peck, Ann. Rep. N. Y. State Mus. **33**: 29.



OOSPORA



GEOTRICHUM, MALBRANCHEA AND TORULOIDEA

1880. Saccardo has placed this in the genus *Ovularia* and made it synonymous with *O. isarioides.*

10. *Oospora scabies* Thaxter, Jour. Mycol. 7: 280. 1893. The first report of this species was in 1891.[16] It very evidently does not belong to the genus *Oospora* as defined in this paper. I have not seen authentic specimens, but from the description it would seem better to establish a new genus for this species.

PEABODY HIGH SCHOOL,
PITTSBURGH, PA.

EXPLANATION OF PLATE LXXXII

All the figures on this and the following plates were drawn with the aid of the camera lucida and are highly magnified. The drawings show the mycelium, sporophores and spores.

1. *Oidium aureum* Link.

2. *Oidium simile* Berk. Reproduced from Jour. Bot. 4: 310. *Pl. 12, fig. a, b.*

3–4. *Oidium simile* Berk.

5. *Oidium megalosporum* Berk. & Curt.

6. *Oidium Murrilliae* Sumstine.

7–9. *Acrosporium* sp. 9 shows leaves of *Platanus orientalis.*

10–11. *Acrosporium Gossypii* Sumstine.

EXPLANATION OF PLATE LXXXIII

1. *Oospora fructigena* (Pers.) Wallr.

2–3. *Oospora Linhartiana* (Sacc.) Sumstine.

4. *Oospora cinerea* (Bon.) Sumstine.

5–7. *Oospora Martinii* (Ellis & Sacc.) Sumstine. 7 reproduced from *Fungi Ital. 849.*

8. *Oospora Arthuri* Sumstine

9. *Oospora fungicola* (Ellis & Barth.) Sumstine.

10. *Oospora Cerasi* (Tracy & Earle) Sumstine.

EXPLANATION OF PLATE LXXXIV

1. *Toruloidea effusa* Sumstine.

2. *Toruloidea Unangstii* Sumstine.

3. *Toruloidea Tulipiferae* (Ellis & Mart.) Sumstine.

4. *Toruloidea candidula* (Sacc.) Sumstine.

5. *Malbranchea pulveracea* (Ellis) Sumstine.

6. *Geotrichum candidum* Link.

7. *Geotrichum cuboideum* (Sacc. & Ellis) Sumstine.

---

[16] Ann. Rep. Conn. Agric. Ex. Station 81. 1891.